

CLAIMS

1. A flat, hollow brushless motor comprising:
 - a flattened tubular motor housing sealed at both ends, first and second housing through holes formed in a center of first and second end plate portions on both sides of the motor housing,
 - a rotor shaft of which a portion of both ends is exposed from the first and second housing through holes,
 - a tool-mounting hole that extends through a center of the rotor shaft, and
 - first and second workpiece insertion recesses formed in external surfaces of the first and second end plate portions of the motor housing,wherein the first and second workpiece insertion recesses are recesses of a prescribed width formed encompassing the first and second housing through holes, respectively, and extending to an external periphery of the motor housing from the housing through holes.
2. The flat, hollow brushless servomotor according to claim 1, wherein the tool-mounting hole has a polygonal cross section such as a hexagonal one.
3. The flat, hollow brushless servomotor according to claim 1 or 2, wherein the maximum length in an axial direction of the rotor shaft is equal to or less than the thickness between bottom faces of the first and second workpiece insertion recesses in the first and second end plate portions on both sides of the motor housing.

4. The flat, hollow brushless servomotor according to claim 1, 2, or 3, comprising a lead wire laying area extending to an outside in a radial direction from an external peripheral surface of the motor housing,

wherein lead wires disposed along a recess groove formed on an inside surface of the first or second end plate portion of the motor housing are brought out to the lead wire laying area.

5. The flat, hollow brushless servomotor according to claim 1, 2, 3, or 4, comprising a detection mechanism for detecting motor magnetic pole positions,

wherein the detection mechanism comprises an FG magnet disposed on one end face of the rotor shaft, and a magnetic sensor such as a Hall element disposed in an internal surface of the first or second end plate portion facing the FG magnet in the motor housing.